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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,012

08/21/2006

Noboru Yanai

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP  
1250 CONNECTICUT AVENUE, NW  
SUITE 700  
WASHINGTON, DC 20036

EXAMINER

MONDT, JOHANNES P

ART UNIT

PAPER NUMBER

3663

NOTIFICATION DATE

DELIVERY MODE

01/28/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,012	<b>Applicant(s)</b> YANAI ET AL.	
	<b>Examiner</b> JOHANNES P. MONDT	<b>Art Unit</b> 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5 and 7 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6 Forms PTO-1449</u>  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Another examiner (Johannes Mondt) has assumed sole responsibility for the examination of the application.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/15/09 has been entered.

### ***Information Disclosure Statement***

3. The examiner has considered all items listed in the Information Disclosure Statements filed 8/21/06, 12/7/07, 3/14/08 and 4/28/08. A small typographical error was corrected by annotation on date of publication of WO 02/078010 A1, which is October 3, 2002, not October 10, 2002. Since the item has already been considered as family member the item's consideration is not affected by said typographical error. Signed copies of the respective Forms PTO-1449 are herewith included as acknowledgment.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. ***Claims 1, 3 and 7*** are rejected under 35 U.S.C. 103(a) as being obvious over Bolton et al (WO 02/078010 A1) (made of record by applicants in IDS filed 2/6/09; a family member of previously cited Bolton et al) in view a patent to the “Gesellschaft zur Förderung der Forschung an der Eidgenössischen Technischen Hochschule Zürich”, Switzerland (GB-136902) (made of record by applicants in IDS filed 4/28/08, and henceforth referred to as “ETH”), in view of Applicant’s Admitted Prior Art, relying on their description of the “Background Art” (specification, paragraph [0002] on page 1).

*Bolton et al teach* a gas turbine plant (10 (Figure 1, page 9, lines 4-11) comprising: a high-temperature gas-cooled reactor (14, loc.cit.) which warms a coolant (namely: helium gas) by thermal energy (see Abstract); at least a first gas turbine (high pressure turbine 16), a second gas turbine (a low pressure turbine 18) and a third gas turbine (a power turbine 20) (for 16, 18 and 20 see Figure 1 and page 9, lines 4-11); the first gas turbine that is rotated by the coolant being warmed by the high-temperature gas-cooled reactor and shares a first shaft with a first compressor (the high pressure compressor 30) (Figure 1 and page 9, lines 4-11) compressing the coolant; the second gas turbine that is rotated by the coolant being discharged from the first gas turbine and shares a second shaft with a second compressor (low pressure compressor

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26) (Figure 1 and page 9, lines 4-11) compressing the coolant; the third gas turbine that is rotated by the coolant being discharged from the second gas turbine and shares a third shaft with a generator (generator 32) (Figure 1 and paragraph bridging pages 9 and 10) performing electrical power generation operation.

*Bolton et al do not necessarily teach* the limitations on first speed indicator, second speed indicator and bypass control section as newly recited. However, it would have been obvious to include said limitations in view of ETH, who, in a patent on improvements to the cooling of a generating plant, in particular a gas-cooled nuclear power plant (page 3, line 81, second column – page 4, line 14), hence art analogous to Bolton et al, teach the inclusion of speed indicators 202 and 201 for all of their two gas turbines, i.e., first gas turbine 61 and second gas turbine 62 (Figure 2 and page 4, lines 73-100 of the second column), and a bypass control section 17/27/201 (N.B.: ‘pressure gauge’, and sensing element 201 jointly are capable of controlling valve 161) (see page 4, second column, lines 72-84 and 104-115). The inclusion of speed indicators and bypass control section would have been conventional in light of ETH, and obvious to one of ordinary skill in the art as means to improve the diagnostic and control capabilities of the plant, which increased diagnostic and control provides ample motivation, especially in the field of nuclear reactor technology, where cost containment is readily overruled by safety concerns. Combination of the teaching by ETH and Bolton is straightforward because all that is needed is the inclusion of parts 201, 202 and 17 independent of the remainder of the plant by Bolton et al. Therefore, a high expectation of success in the combination is ensured. In the combined invention, the bypass control

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section is *capable* of controlling a bypass pathway allowing the coolant to bypass the third gas turbine based on rotating speeds of the respective gas turbines since the latter influence gas pressure. Whether the bypass control section is indeed used in the manner as claimed is a matter of intended use. Applicant is reminded that in connexion with the limitation “controls the bypass pathway based on the rotating speed of the first gas turbine measured by the first speed indicator and the second gas turbine measured by the second indicator”, intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963).

*Finally, although Bolton et al do not specifically teach* the recited fission products to be “clad” in “coated particle fuels”, this would at least have been obvious from applicants’ Admission of the Prior Art, as witnessed by the first sentence in [0002] on page 1.

In conclusion, both with regard to the teaching of ETH and Applicant’s Admission of Prior Art, nothing more is involved than combining prior art elements according to known methods to yield predictable results. MPEP 2141.

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*On claim 3:* the bypass pathway is provided with bypass valves 27 and 161 capable of controlling the flow volume (i.e., flux) of the coolant flowing through the bypass pathway.

*On claim 7:* in the combined invention the bypass pathway is provided from upstream of the second gas turbine to downstream of the second gas turbine, bypass valve 161 being in between gas turbines 61 and 62 in ETH.

### ***Response to Arguments***

Applicants' arguments filed 10/15/09 have been fully considered but they are not persuasive in light of an update search, given the specific formulation of the claim amendments. Examiner herewith includes by reference the rejection of the independent claim in response to applicants' argument.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHANNES P. MONDT whose telephone number is (571)272-1919. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHANNES P MONDT/  
Primary Examiner, Art Unit 3663